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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/694,928

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Ian Andrew Maxwell

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EXAMINER

DUPUIS, DEREK L

ART UNIT

PAPER NUMBER

2883

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/694,928

Applicant(s)

MAXWELL ET AL.

Examiner

Derek L. Dupuis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25, 29-32, 35, 43-45 and 49-71 is/are pending in the application.
- 4a) Of the above claim(s) 29-32 and 49-65 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25, 35, 43-45 and 66-71 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/1/2006 has been entered.

2. Currently, claims 1-24, 29-32, and 49-65 are withdrawn from consideration. Claims 26-28, 33, 34, 36-42, and 46-48 are cancelled. Claims 25, 35, 43-45, and 66-71 are pending in the case and have been examined.

Response to Arguments

3. Applicant's arguments with respect to claims 25, 35, 43-45, and 66-71 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112 – New Matter

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 35, 69, and 70 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The disclosure does not provide support for the claimed subject matter.

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Specifically, the “organosilicon condensate polymer” is not mentioned, described, or discussed in the specification. The examiner questions what qualities and features this material provides as this information is absent from the present disclosure. Furthermore, the examiner cannot ascertain how to manufacture this material as the disclosure is silent on this as well. The newly added limitation of “organosilicon condensate polymer” is new matter.

6. The amendment filed 3/1/2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the material of an organosilicon condensate polymer (as added to claims 35, 69, and 70) is not supported by the original specification. This subject matter is taught in the patent assigned to the assignee (Pat No. 6,818,721). However, the disclosure of this patent is not a part of the present application’s disclosure. Therefore, the limitation of an “organosilicon condensate polymer” material is new matter.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 25, 45, 66-68, and 70 are rejected under 35 U.S.C. 102(b) as being anticipated by

Cho et al (US 5,265,177).

9. Regarding claim 25, Cho et al teach an integrated optical waveguide shown in figure 1 comprising a substrate (14), and a light transmissive element (12) comprising a waveguide and a lens as a unitary body. The device further comprises an upper cladding (17) patterned to have at least one region in which the light transmissive element (12) is air clad. As can be seen in the figure, the cladding (17) does not cover the light transmissive element thus making the element (12), "air clad." The lens has a face perpendicular to the substrate as can be seen best in figures 6-8. The lens focuses light in a plane parallel to the substrate as can be seen by the coupling to the parallel fiber in figure 1. Also, the lens face is clearly 50% larger than the waveguide portion.

10. Regarding claim 45, Cho et al teach an integrated optical waveguide as discussed above in reference to claim 25. Cho et al also teach that the light transmissive element comprises a polymer material (see column 3, lines 51-52).

11. Regarding claims 66 and 67, Cho et al teach an integrated optical waveguide as discussed above in reference to claim 25. Cho et al also teach a lower cladding layer (15) between the light transmissive element (12) and the substrate (14). Cho et al also teach that the lower cladding layer (15) comprises a semiconductor material (see column 5, lines 51-59).

12. Regarding claim 68, Cho et al teach an integrated optical waveguide shown in figure 1 comprising a substrate (14), and one or more cladding layers (17) comprising at least one cladding layer (17) patterned to have at least one region with the cladding material absent. In fact, every cladding layer ever made will meet the limitation of having "having at least one region with the cladding material absent" because all claddings will have a beginning and end, therefore, there will always be a region in which the cladding is absent. Cho et al also teach a

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light transmissive element (12) comprising a waveguide and a lens as a unitary body. The lens has a face perpendicular to the substrate as can be seen best in figures 6-8. The lens focuses light in a plane parallel to the substrate as can be seen by the coupling to the parallel fiber in figure 1. Also, the lens face is clearly 50% larger than the waveguide portion.

13. Regarding claim 70, Cho et al teach an integrated optical waveguide as discussed above in reference to claim 68. Cho et al also teach that the light transmissive element (12) is a polymer (see column 3, lines 51-52). Cho et al also teach that the upper cladding layer (17) is a semiconductor material (see column 5, lines 51-59).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 35, 43, 44, 69, and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Cho et al (US 5,265,177)* in view of *Ghoshal et al (US 6,832,036 B2)*.

16. Regarding claims 35, 43, 44, 69, and 71, Cho et al teach an integrated optical waveguide as discussed above in reference to claims 25 and 68, respectively. Cho et al do not explicitly disclose that the substrate comprises silicon, quartz, fused silica, glass, or a polymer. However it is routine in the art to use silicon substrates. Cho et al does not explicitly teach that the upper cladding layer (17) is an organosilicon condensate polymer.

17. Ghoshal et al teach an integrated optical waveguide with a light transmitting core and an upper and lower cladding. Ghoshal et al teaches that the core and the upper and lower claddings

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can comprise siloxane polymers and that the substrate can be made from materials such as glass, silica, quartz, or plastics. See column 2, line 25 to column 4, line 52.

18. It would have been obvious to one of ordinary skill in the art at the time of invention to make the core and claddings taught by Cho et al out of a siloxane polymer as taught by Ghoshal et al. Motivation to do this would be the desirability of the high refractive index contrast between the siloxane polymer core and the siloxane polymer claddings and the compatibility with silicon processing requirements (see abstract).

19. It would have been obvious to one of ordinary skill in the art at the time of invention to substitute organosilicon condensate polymer for the siloxane polymer since the two materials are equivalents for their use in the optical waveguide art and the selection of any of these known equivalents to clad a core would be within the level of ordinary skill in the art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derek L. Dupuis whose telephone number is (571) 272-3101. The examiner can normally be reached on Monday - Friday 8:30am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Derek L. Dupuis
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Frank G. Font
Supervisory Patent Examiner
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